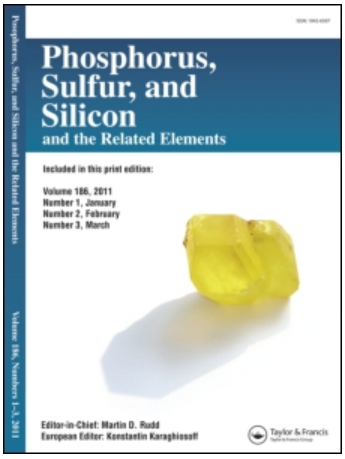

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Application of Thermodynamics of Accumulation Processes Regularities in Crystalline Phosphates Properties Investigation

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APPLICATION OF THERMODYNAMICS OF ACCUMULATION PROCESSES REGULARITIES IN CRYSTALLINE PHOSPHATES PROPERTIES INVESTIGATION

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A polyenergetic conjugation relationship (PCR) existing between the intensity or capacity factors of state of both has been developed in the thermodynamics of accumulation processes for processes and effects without mass transfer and with or without qualitative transformation in the affected system. The remperature dependence of the solubility in water of crystalline phosphates as: K_2HPO_4, Na_2HPO_4, $NH_4H_2PO_4$, Na_3PO_4, $Na_4P_2O_7$ proved to be a strongly expressed polyenergetic conjugation property [1]. Further investigation proved that the presence of more than one crystal types or a crystal phase change in the crystals-saturated solution heterogeneous systems, caused by the crystallization temperature used, can be detected by the values of the concentration exponents in a PCR. Moreover, the dissolving rates based on the values of crystal particles' surface area and temperature can be predicted by PCR-derivatives.

[1] M.R.Mehandjiev, Solubility of Crystalline Phosphates as Polyenergetic Property. Paper of Internat. Conference on Phosphorus Chemistry, June 1-5, 1981, Durham, N.Carolina, USA, Abstracts' Volume, Duke University, Durham, 1981, Abstr. No 201.